SOT-23-3L Plastic-Encapsulate MOSFETS

Features

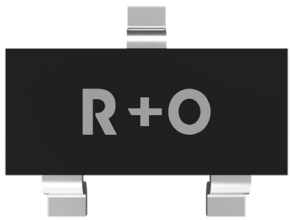
- V_{DS}=-20V
- I_D=-5.5A
- $R_{DS(on)}$@VGS=-4.5V < 42mΩ
- $R_{DS(on)}$@VGS=-2.5V < 55mΩ
- Advanced Trench technology
- Lead free product is acquired

Drain-source Voltage
-20 V
Drain Current
-5.5 Ampere

Applications

- Interfacing Switching
- Load Switching
- Power management

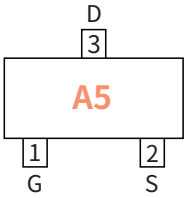
SOT-23-3L

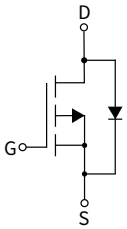


Mechanical Data

- Case: SOT-23-3L
  Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram





Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23-3L	R1	0.0132	3000	30000	180000	7''

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	VALUE
Drain-source Voltage		V_{DS}	V	-20
Gate-source Voltage		V_{GS}	V	±10
Drain Current	T_A=25°C @ Steady State	I_D	A	-5.5
Pulsed Drain Current		I_{DM}	A	-23
Total Power Dissipation @ T_A=25°C		P_D	mW	1200
Thermal Resistance Junction-to-Ambient @ Steady State		$R_{\theta JA}$	°C / W	105
Junction and Storage Temperature Range		T_J,T_{STG}	°C	-55 ~+150

Static Parameter Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250μA	V	-20	—	—
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V	μA	—	—	-1.0
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±10V, V_{DS}=0V	nA	—	—	±100
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	V	-0.4	-0.62	-1.0
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= -4.5V, I_D=-5A	mΩ	—	29	42
		V_{GS}= -2.5V, I_D=-4A		—	35	55
		V_{GS}= -1.8V, I_D=-3A		—	45	75

Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	V_{DS}=-10V V_{GS}=0V f=1MHZ	pF	—	1010	—
Output Capacitance	C_{oss}			—	135	—
Reverse Transfer Capacitance	C_{rss}			—	110	—

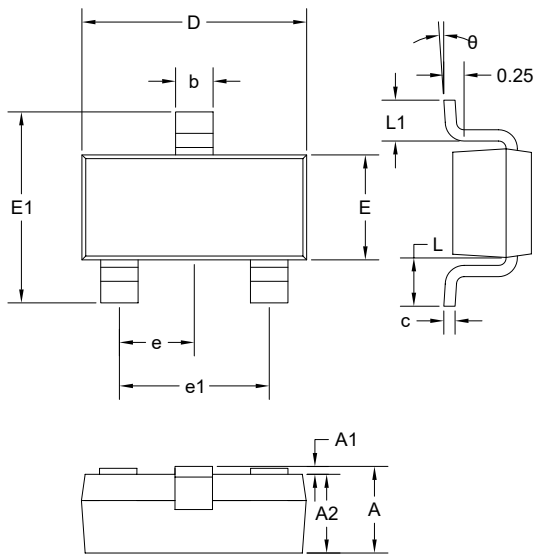
Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	V_{GS}=-4.5V V_{DS}=-10V I_D=-4A	nC	—	11	—
Gate-Source Charge	Q_{gs}			—	2	—
Gate-Drain Charge	Q_{gd}			—	2	—
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-4.5V V_{DS}=-10V R_G=2.5Ω I_D=-1A	ns	—	8	—
Turn-on Rise Time	t_r			—	36	—
Turn-off Delay Time	$t_{D(off)}$			—	78	—
Turn-off fall Time	t_f			—	55	—

Drian-Source Diode Characteristics

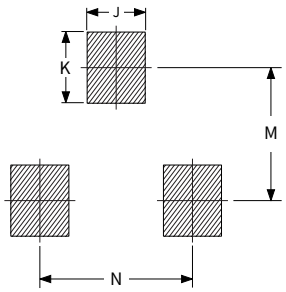
PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	I_S=-5.5A, V_{GS}=0V	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-5.5

Package Outline Dimensions (SOT-23-3L)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.05	1.25	0.041	0.049
A1	-	0.10	-	0.004
A2	1.05	1.15	0.041	0.045
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.82	3.02	0.111	0.119
E	1.50	1.70	0.059	0.067
E1	2.65	2.95	0.104	0.116
e	0.90	1.00	0.035	0.039
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
L1	0.30	0.60	0.012	0.024
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.95	-	0.037
M	2.00	-	0.078	-
N	-	2.0	-	0.079